D-C and Low Frequency Lab

HERMACH ENGELHARD TRANSFER VOLTAMMETER
MODEL NO. 30081

Page 2, 3 & 4

INSTRUCTION MANUAL

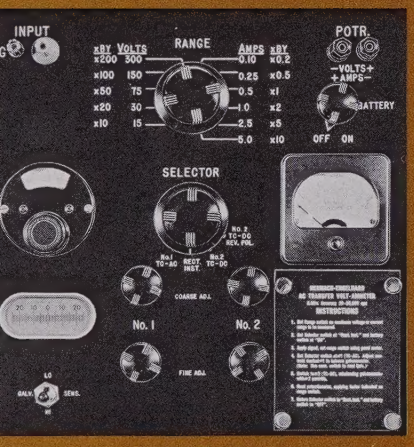
ENGELHARD
INDUSTRIES, INC.

INSTRUMENTS & SYSTEMS DIVISION
850 PASSAIC AVENUE, EAST NEWARK, HARRISON P.O., N.J.

DATA FILE:

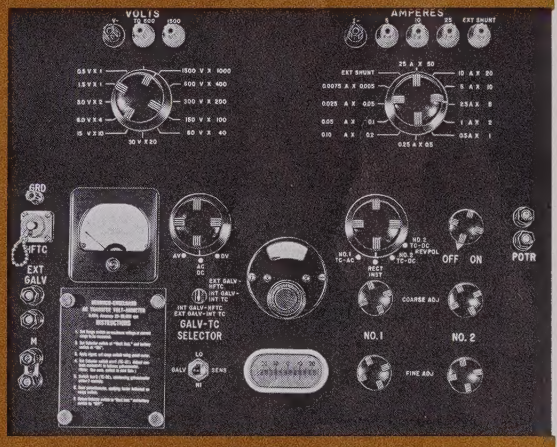
HERMACH-ENGELHARD

transfer volt-ammeters



MODEL A

MODEL B



MODEL C

A Complete Line of High-Accuracy, Wide Frequency-Range Instruments for the Precision Measurement of Alternating and Direct Current and Voltage

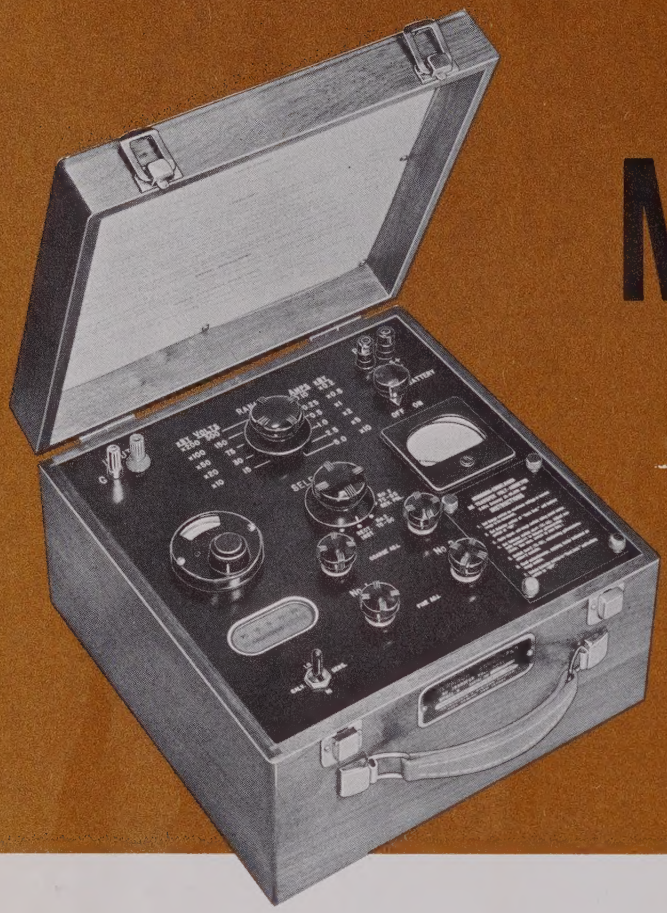
ENGELHARD

INDUSTRIES, INC.

INSTRUMENTS AND SYSTEMS DIVISION

850 PASSAIC AVE. • EAST NEWARK, NEW JERSEY

HERMACH - ENGELHARD • TRANSFER VOLT - AMMETERS



MODEL "A"

PART NO. 30081

FREQUENCY RANGE
5 to 50,000 CPS.
.05% ACCURACY

The Model "A" Hermach-Engelhard Transfer Volt-Ammeter has been serving engineers faithfully for 7 years. This standard gives accurate coverage of ranges of current and voltage commonly required in the calibration of secondary-standard meters. This instrument, like Models "B" and "C", utilizes the null principle, generally associated with precise laboratory techniques, in making its measurements. Results are read on an external D.C. potentiometer in a conventional, familiar way, then simply multiplied by convenient whole numbers to give measured amperes or volts to .05%, without correction, at frequencies up to 50,000 cps.

ACCESSORIES

(A) External Voltmeter Multiplier (Part No. 30501) adds ranges of 600 and 1200 volts. Accuracy ±.15%; Frequency Range: 5 to 10,000 cps

(B) Current Transformer (Part No. 30500).
Ranges: 10, 20, 50, 100 amperes; Frequency Range: 25 to 2500 cps.
Accuracy 25-2500 cps ±.2%

MODEL "A" SPECIFICATIONS

AS A VOLTMETER

RANGE	FREQUENCY	ACCURACY (% of full scale)
15v	5-50,000 cps	.05%
30v	5-50,000 cps	.05%
75v	5-50,000 cps	.05%
150v	5-50,000 cps	.05%
300v	5-50,000 cps	.05%

AS AN AMMETER

RANGE	FREQUENCY	ACCURACY (% of full scale)
100 ma	5-50,000 cps	.05%
250 ma	5-50,000 cps	.05%
500 ma	5-50,000 cps	.05%
1.0 amp	5-50,000 cps	.05%
2.5 amp	5-50,000 cps	.05%
5.0 amp	5-50,000 cps	.05%

Weight: 19 lbs. Size: 13 x 13 x 8½ inches

MODEL "B"

PART NO. 34328

FREQUENCY RANGE
5 to 50,000 CPS.
.05% ACCURACY

The Model "B" Hermach-Engelhard Transfer Volt-Ammeter is designed to complement the Model "A" in the lower voltage and current ranges. It offers the same important advantages of extreme accuracy of measurement, precision construction and simplicity of operation and maintenance. Like its companion instruments, the Model "B" utilizes the null principle, thereby eliminating the disadvantages which formerly limited the accuracy and usefulness of thermocouple instruments. There is no deflecting instrument and thus no possible errors due to zero shift, spring or magnet changes, scale corrections, etc.

MODEL "B" SPECIFICATIONS

AS A VOLTMETER

RANGE	FREQUENCY	ACCURACY (% of full scale)
0.5v	5-50,000 cps	.05%
1.5v	5-50,000 cps	.05%
3.0v	5-50,000 cps	.05%
6.0v	5-50,000 cps	.05%
7.5v	5-50,000 cps	.05%
15v	5-50,000 cps	.05%

AS AN AMMETER

RANGE	FREQUENCY	ACCURACY (% of full scale)
7.5 ma	5-50,000 cps	.05%
25 ma	5-50,000 cps	.05%
50 ma	5-50,000 cps	.05%
100 ma	5-50,000 cps	.05%

Weight: 19 lbs. Size: 13 x 13 x 8½ inches

ADDITIONAL FEATURES OF THE HERMACH-ENGELHARD METERS

1. A rectifier-type instrument is provided to indicate approximate values of voltage and current. It shows the approximate potentiometer setting and also serves as a range checker to prevent overloading the thermoelement.

2. Thermoelement can be easily replaced by user with no effect on accuracy of the instrument (these thermoelements are furnished by Instruments and Systems Division of Engelhard Industries, Inc. and are pretested for low AC-DC differences and adjusted for the correct heater resistance.)

3. Accessories can be obtained from Instruments and Systems Division to extend the range of the instrument.

4. Measurements can be made at frequencies higher than 50,000 cps, but with less accuracy.

5. Advanced design and extreme care in construction make the wide frequency range of the instrument possible. Only well-aged, accurately-adjusted, wire-wound resistors and non-inductive shunts of low temperature coefficient alloys are used. This frequency range represents an outstanding development.

6. A certificate from the National Bureau of Standards can be furnished (at extra cost) if desired.

UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
WASHINGTON 25, D. C.

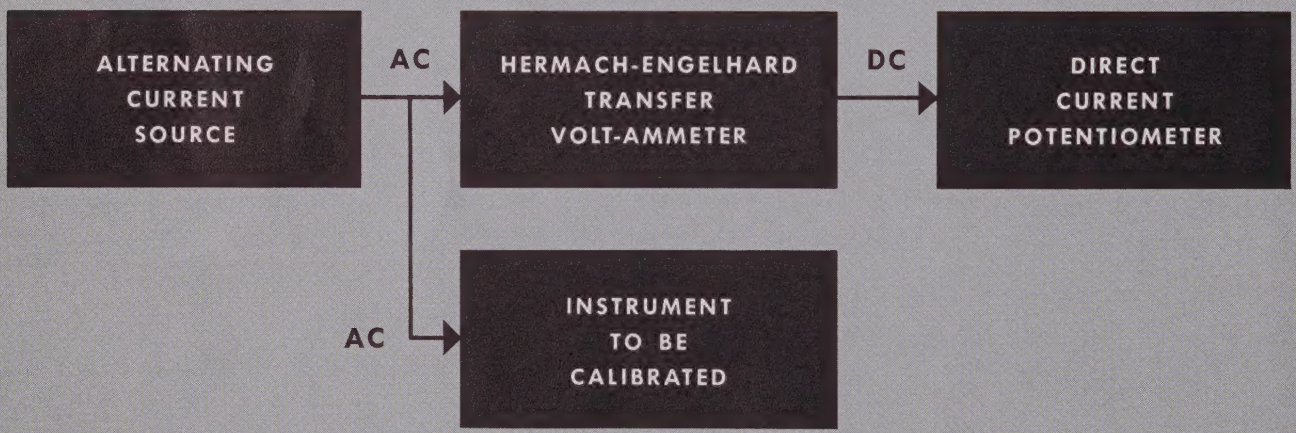
National Bureau of Standards
Certificate

HERMACH-ENGELHARD TRANSFER VOLT-AMMETER
ENGELHARD INDUSTRIES, Inc. Serial No. HE60256

Submitted by

Engelhard Industries, Incorporated
Instruments and Systems Division
850 Passaic Avenue
East Newark, New Jersey

7. A DC potentiometer having a 1½ volt range with accuracy of ±0.015% or better (such as L&N Type K or Rubicon Type B) is required.



HERMACH-ENGELHARD TRANSFER VOLT-AMMETER IN OPERATION

ENGELHARD

INDUSTRIES, INC.

INSTRUMENTS AND SYSTEMS DIVISION

850 PASSAIC AVE. • EAST NEWARK, NEW JERSEY

FORM EI-6077

PTD.

MP MASTER
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